2015

marantz

model 2015

Stereophonic Receiver

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INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 2015 Stereophonic Receiver.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instruction should be read carefully. No attempt should be made to proceed without a good understanding of the operation in the receiver.

The parts list furnish information by which replacement part may be ordered from the Marantz Company. A simple description is included for parts which can be usually be obtained through local suppliers.

1. Service Notes

As can be seen from the circuit diagram, the chassis of Model 2015 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. FM/AM Tuner ..... mounted on P. W. Board P100
2. MPX Stereo Indicator ..... mounted on P. W. Board P200
3. Phono Amplifier ..... mounted on P. W. Board P300
4. Tape Mon, Mono, Loudness and Muting Switch Unit ..... mounted on P. W. Board P400
5. Tone Amplifier ..... mounted on P. W. Board P500
6. Power Amplifier ..... mounted on P. W. Board P600
7. Temperature Compensation unit ..... mounted on P. W. Board P700
8. Power Supply ..... mounted on P. W. Board P800

2. AM Tuner

All components except ferrite bar antenna are mounted on a printed circuit board P100.

The AM signals induced in a ferrite bar antenna are applied to the base of converter transistor H113 through a capacitor of C171, while the local oscillator voltage is injected to the emitter of H113 through a capacitor C172. Both AM signals and oscillating voltage are mixed at the base-emitter junction and converted into 455KHz intermediate frequency. The resulting IF signal is applied to the first IF transformer L116 consisting of one ceramic filter and two tuned circuits.

The output of L116 is led to the transistor H104 which in turn apply its output to the transistor of next stage H105. The fully amplified IF output is then applied to the diode H123 to detect audible signal through the detector transformer L117. The detected audio signal is filtered and the final audio output is obtained from the pin terminal J118 and applied to the function switch.

The DC component of the detected IF signal is used as a AGC voltage to control emitter current of H104 through the resistor R185. A part of IF signal output is also applied to the diode H124 through a capacitor C180 and rectified to obtain DC current for energizing the AM signal strength meter M001.

2.1 Suggestions for AM Tuner trouble shooting

Check for broken AM bar antenna, next try to tune station by rotating fly-wheel tuning knob slowly and observe the AM signal strength meter whether it deflects or not. If the signal strength meter gives a deflection at several frequencies received, no failure may exist in the stages at least preceding final IF transformer L117. Next connect a oscilloscope to the pin terminal J118 and check for audio signals with the tuning meter deflected. If the signal strength meter does not deflect, check the local oscillator circuit. Normal oscillating voltage at the hot end of the oscillator tuning capacitor is about 2 or 3 volts, varying with tuning capacitor position. When measuring oscillating voltage use a RF VTVM, no circuit tester gives correct indication. If the local oscillator voltage is normal, check all voltage distribution in the AM circuits by using a DC VTVM and compare the measured values with those given in the schematic diagram.

3. FM Tuner

All components are mounted on a printed circuit board P100.

FM signals induced by a FM antenna are led to FM antenna coil L101. These signals are then applied to the FET RF amplifier which in turn applies its output to the next transistor mixer H102 through a high Q tuned circuit. The mixer convert its input signal into 10.7MHz intermediate Frequency and amplifies it at the same time. The H103 is a local oscillator and its output is injected into the base of mixer transistor, the injection voltage is about 40mV.

The 10.7MHz front end output is led to the next IF section. The IF section consists of five stage of IF amplifier and one stage of sub IF amplifier.

Two pieces of ceramic filters are also used to obtain high selectivity, a pair of symmetrical diode limiters are also employed for the best limiting characteristics, improved capture ratio and good AM suppression. A part of IF amplifier H105 output is rectified by the diode H115, H116 and its DC output is fed back to the gate of FET RF amplifier to decrease the gain with increased signal strength.

3.1 Muting and Auto-Stereo Switching Circuits

The muting circuit consisting of all solid-state electrical switching has been incorporated in the Model 2015.

The DC voltage obtained by rectifying the sub IF output signal from the H109 is applied to the base of H110 and turns on it, if the sub IF output is greater than predetermined level (muting threshold level). When H110 turns on, the muting switch transistor H111 is turned on, thus decreasing the emitter collector resistance to near zero ohm and allowing emitter current path to the Final IF amplifier H108. When the input signal is lower than the predetermined level, the DC output obtained is small and can not turn on the H110, thus the H110 keeps its turn off state and this makes the switch transistor keep H111 turn off, then no emitter current is supplied to the H108 and signals below the threshold level are muted out.

The muting threshold level can be varied by adjusting the trimming resistor R153.

The DC voltage obtained is also used to make the Auto-Stereo switching transistor H112 turn on and off, and used to energizing the signal strength merer M001.

3.2 MPX Stereo Decoding Circuit

A Non-equalized audio signal from the FM detector is applied through the phase adjuster network of C148 and C161 to input terminal pin ① on the MPX decoder IC H114. The MPX decoder IC consists of a stereo decoder and postamplifier for the output. The right and left channel signals decoded by the stereo decoder H114, appear at pin ⑩ (right channel) and pin ⑪ (left channel), respectively. These signals are passed through the low-pass filters and de-emphasis networks to eliminate undesirable residual switching signals and are then delivered to postamplifier input pin ⑤ (right channel) and pin ⑦ (left channel), respectively. The signals amplified in the postamplifiers to the required levels (approximately 10 dB) are delivered to pin ⑥ (right channel) and pin ⑧ (left channel), and are then passed through C169 and C168 to pin terminals J114 and J115, hence, to the function switches.

Pin⑮ on the MPX IC H114 is connected through R163 to the collector of the autostereo switch transistor H112, which turns on or off according to the incoming FM signal strength, thereby automatically switching between the stereophonic and monaural operations. The H112 turns on or off in accordance with whether the FM signal strength is more or less than approximately 25μV.

3.3 Suggestion for Trouble Shooting of FM Tuner

3.3.1 Symptom: No. FM Reception

First turn on the Power switch and try to tune FM stations. Rotate the fly-wheel tuning knob slowly and observe the FM signal strength meter. If the signal strength meter deflect at several frequencies received, the tuner circuits preceding the discriminator circuit may have no failure.

When no reading is obtained in the meter, check FM local oscillator circuit, using a RF VTVM. The normal local oscillator voltage is one or two volts (rms) at the tuning capacitor, depending on the tuning capacitor position. If the local oscillator voltage is normal, next check all voltage distribution in the FM Front End and IF amplifier unit and compare them with those shown in the circuit diagram. When signal strength meter deflects but no sound is obtained, check audio circuits, using high sensitive oscilloscope.

3.3.2 Symptom: No Stereo Separation

First check the "MONO" switch is in normal out position. Connect a FM RF signal generator output modulated by a stereo modulator to the rear FM antenna terminals, and check the stereo beacon is turned on or not. If not turned on, check for 19 KHz pilot signal and 38 KHz switching signal, using an oscilloscope.

4. Phono and Pre-amplifier

Signals from the tuner and AUX jacks are applied to the selector switch. Signals from the PHONO jacks are applied to the phono-amplifier consisting of transistor H301 and H303. The gain of the amplifier is 37 dB. The amplified and equalized phono-signals are, then, fed to other section of the selector switch which, in turn, applies output signals from the tuner, phono-amplifier and AUX jacks to the TAPE MONITOR switch and TAPE OUT jacks. The TAPE MONITOR switch applies the signals to the balance and volume controls.

The controlled signals are fed to the pre-amplifier consisting of H501. Frequency response of the amplifier can be varied by BASS and TREBLE controls. The controlled output are then led to the main amplifier.

5. Main Amplifier

Transistor H601 is a pre-driver coupled to the transistor H603 through capacitor C611. Transistor H603 drives the inverter transistors H615 and H617 which, in turn, drive the power stage consisting of H001 and H002. Transistors H611 and H613 are current limitters and operate as power protecting circuits.

Excessive currents flowing into the power stage are detected by the resistors R645 and R650 and the resultant variations are applied to the transistors H611 and H613 and make them turned on. This decreases the current flowing into the H615 and H617. In this way the currents flowing in the power stage (H001 and H002) are restricted within a safe value.

6. Audio Trouble Analysis

1. Excessive line consumption	a. Check for shorted rectifiers H802, H803, H804, H805, H806 and H807.
	b. Check for shorted transistors H001, H002. Check L002 for short.
2. No line consumption or zero bias.	a. Check line cord, fuse, shorted H701, H702, H605 and H606.
	b. Check for open rectifiers H802, H803, H804, H805, H806 and H807 or open L002.
3. High hum and noise level.	a. Check filter capacitors C004, C601 and C602.
4. Parastic oscillation	a. Check for defective capacitors, C607, C608, C613, C614, C617 and C618.
5. Improper clipping	a. Check for proper adjustment of R615 and R616.

7. Test Equipment Required for Servicing

Table 1 lists the test equipment required for servicing the Model 2015 Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment.
Test Loop		Used with AM Signal generator
FM Signal Generator	Less than 0.3% distortion	Signal source for FM alignment.
Stereo Modulator	Less than 0.3% distortion	Stereo separation alignment and trouble shooting.
Audio Oscillator	Weston Model CVO-100P, less than 0.02% residual distortion is required.	Sinewave and squarewave signal source.
Oscilloscope	High sensitivity with DC horizontal and vertical amplifiers.	Waveform analysis and Trouble Shooting, and ASO alignment.
VTVM	With AC, DC, RF range	Voltage measurements.
Circuit Tester		Trouble Shooting.
AC Wattmeter	Simpson, Model 390	Monitors primary power to Amplifier.
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition.
Line Voltmeter	Commercial Grade (0-150VAC)	Monitors potential of primary power to amplifier.
Variable Autotransformer (0-140VAC, 10 amps.)	Powerstat, Model 116B	Adjusts level of primary power to amplifier.
Shorting Plug	Use phono plug with 600 ohm across center pin and shell.	Shorts amplifier input to eliminate noise pickup.
Output Load (8 ohms, 0.5%, 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load (4 ohms, 0.5%, 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination.

Table 1. Test Equipment Required for Servicing

8. AM Alignment Procedure

8.1 AM IF Alignment

1. Connect a sweep generator to the test point Ⓐ or J107 and an alignment scope to the test point Ⓑ.
2. Rotate each core of IF transformer L116 and L117 for maximum height and flat top symmetrical response.

8.2 AM Frequency Range and Tracking Alignment

1. Set AM signal generator to 525 KHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end.) and adjust the oscillator coil L115 for maximum audio output.
2. Set the signal generator to 1650 KHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor (CA-2) for maximum audio output.
3. Repeat the step 1 and 2 until no further adjustment is necessary.
4. Set the generator to 600 KHz and tune the receiver to the same frequency and adiust a slug core of AM ferrite rod antenna for maximum output.
5. Set the generator to 1400 KHz and tune the receiver to the same frequency and adjust the trimming capacitors of Antenna (CA-1) for maximum output.
6. Repeat the step 4 and 5 until no further adjustment is necessary.

Note: During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

9. FM Alignment Procedure

1. Connect a FM signal generator to the FM antenna terminals and a oscilloscope and an audio distortion analyzer to the tape output jacks on the rear panel.
2. Set the FM SG to 87.5 MHz and provide about 3 to 5 μV. Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the core of oscillator coil L103 to obtain maximum audio output.
3. Set the FM SG to 108.5 MHz and provide about 3 to 5 μV output. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C187 for Maximum output.
4. Repeat the step 2 and 3 until no further adjustment is necessary.
5. Set the FM SG to 90 MHz and tune the receiver to the same frequency. Decrease signal generator output until the audio output level decreases with the decreasing generator output. Adjust the antenna coil L101, RF coil L102 and IF transformer L105 for minimum audio distortion.
6. Set the FM SG to 106 MHz and tune the receiver to the same frequency. Adjust the trimming capacitor CF-1, CF-2 for minimum distortion.
7. Repeat the step 5 and 6 until no further adjustment is necessary.
8. Connect a DC VTVM with 1 volt range selected to the test point Ⓔ(J120) and adjust the secondary core (upper) of discriminator transformer L107 so that no voltage reading is obtained on the VTVM at no signal.
   Next set the FM SG to 98 MHz and increase the output level to 1 KμV, then tune the receiver to the same frequency so that no deflection is obtained on the VTVM.
   Adjust primary core (bottom) of L107 for minimum distortion, and adjust the L108 for the maximum deflection of FM signal strength meter M001.

9.1 STEREO Separation Alignment

1. Set the FM SG to provide 1 KμV at 98 MHz.
   Tune the receiver to the same frequency perfectly (so that the VTVM connected to the test point Ⓔ gives no reading).

2. Modulate the FM SG with stereo composite signal consisting of subchannel signal only (of course a pilot signal must be included).
   Adjust the core of L110 for maximum audio output, then, modulate the FM SG with a stereo composite signal consisting of L or R channel only, and adjust the trimming resistor R161 for maximum and equal separation in both channels.

9.2 Muting Circuit Alignment

1. Set the FM SG output to provide 25 μV (IHF) at 98 MHz and tune the receiver to the same frequency.
   Adjust the trimming resistor R153 for the threshold level of 25 μV (during this adjustment turn the MUTING pushswitch "on").

10. Audio Adjustment

1. Connect a VTVM across the resistor R647 and adjust the trimming resistor R627 until the VTVM reads 7.5 mV DC.
   For the other channel connect the VTVM across the R648 and adjust the R628 for the same reading.
2. Connect a oscilloscope across the speaker terminals. Apply an audio signal of 1 KHz to the AUX jucks and increase the audio signal until the audio output on the scope begin to start clipping.
   Adjust the trimming resistor R615 for equal and symmetrical clipping.
   For the other channel adjust the R616.

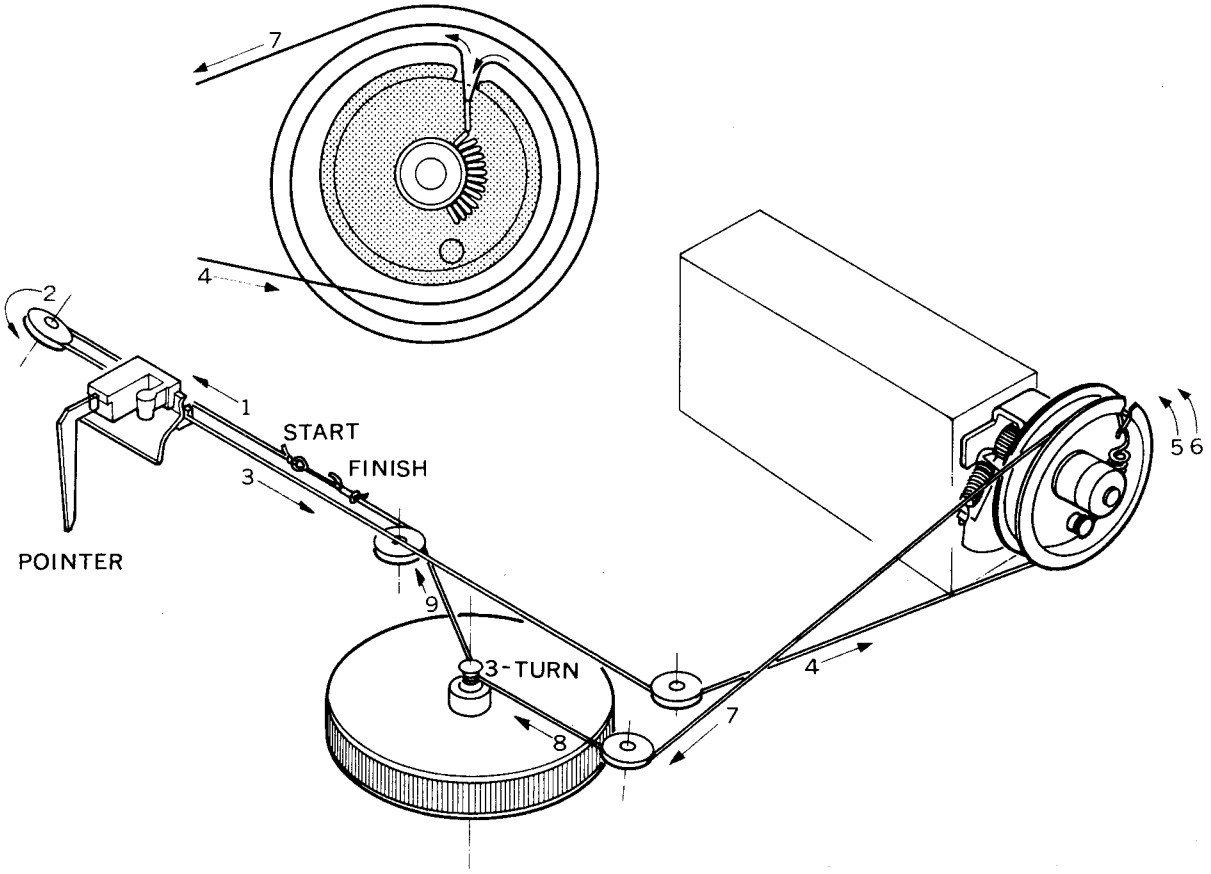

Figure 1. Dial Stringing

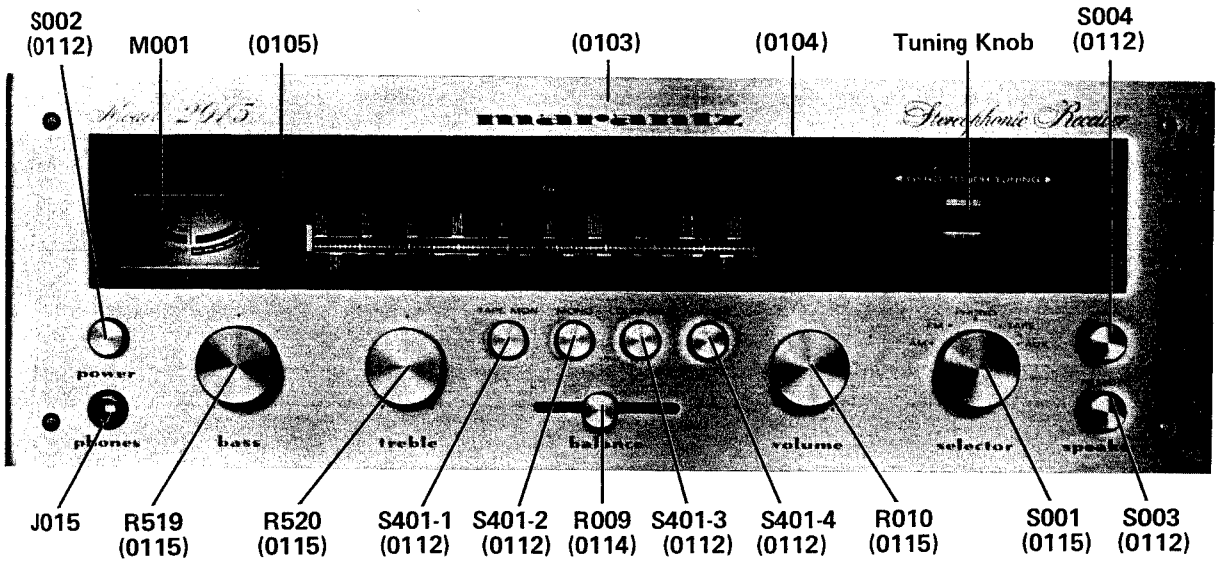

Figure 2. Front Panel Adjustment and Component Locations

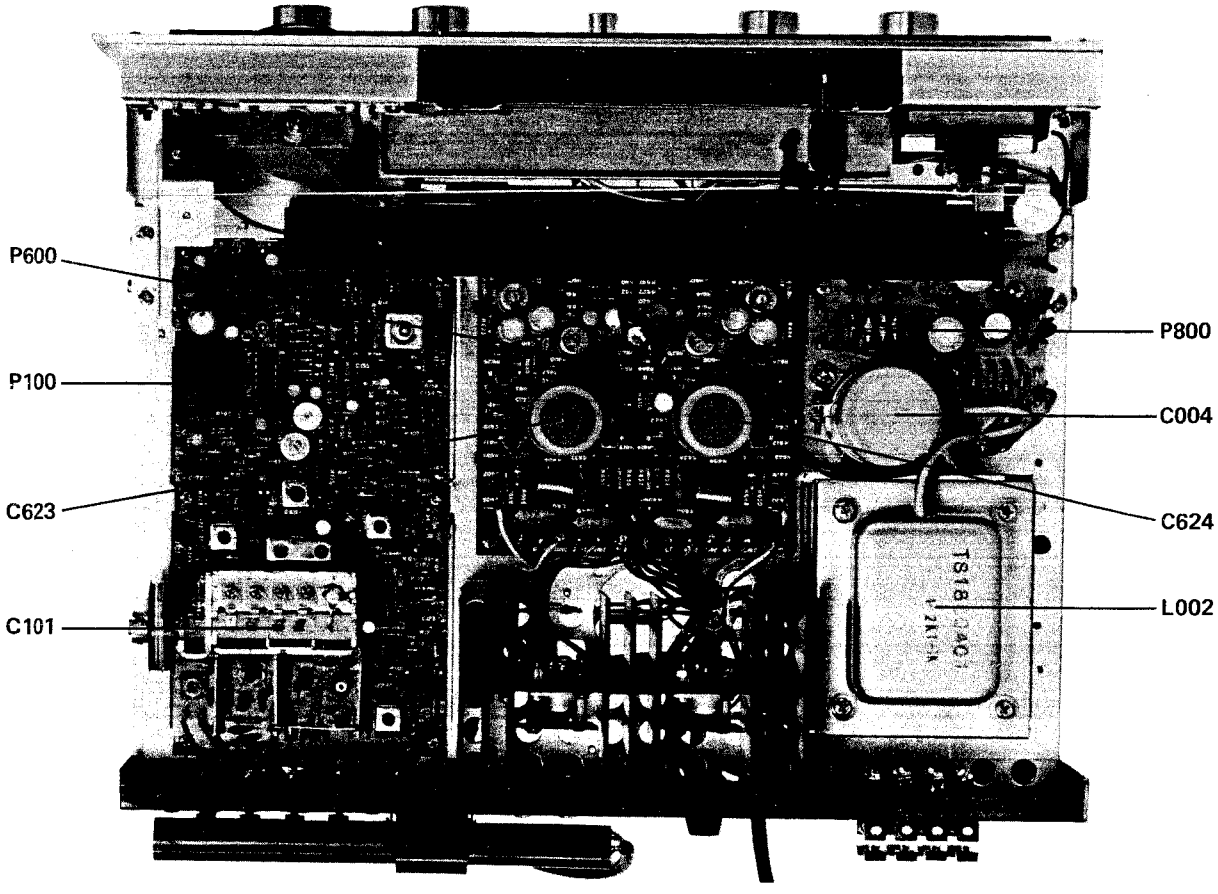

Figure 3. Main Chassis Component Locations (Top View)

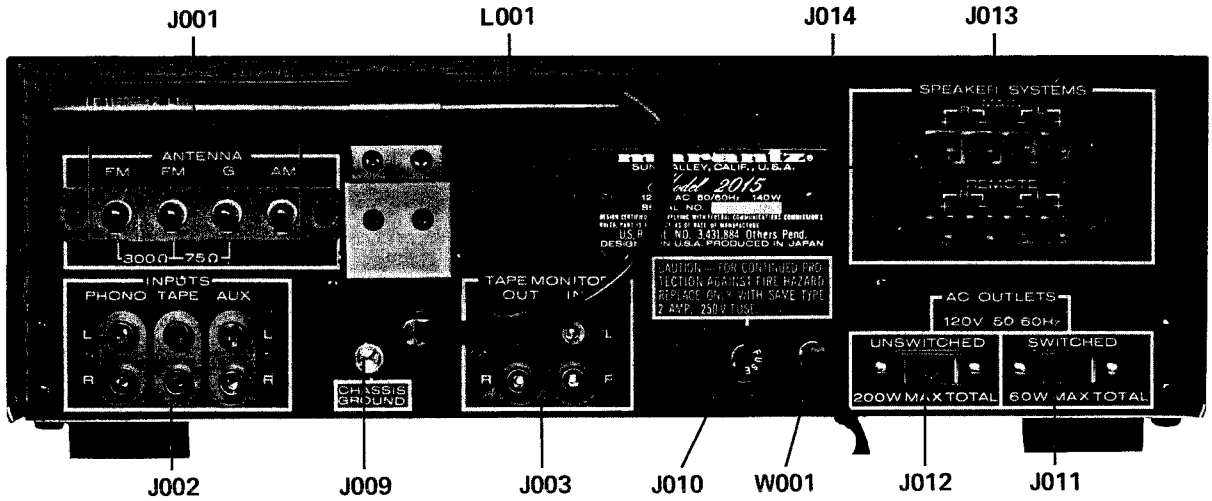

Figure 4. Rear Panel Adjustment and Component Locations

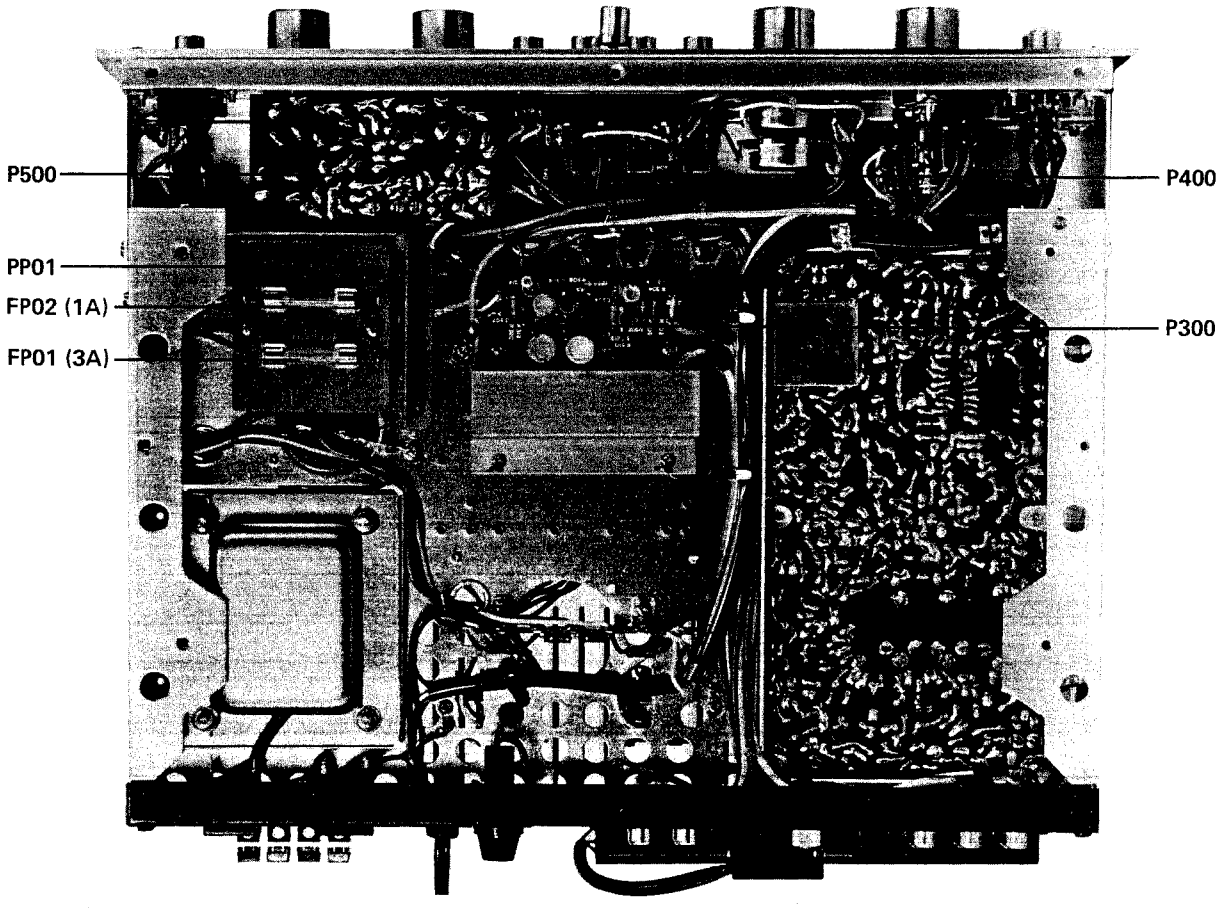

Figure 5. Main Chassis Component Locations (Bottom View)

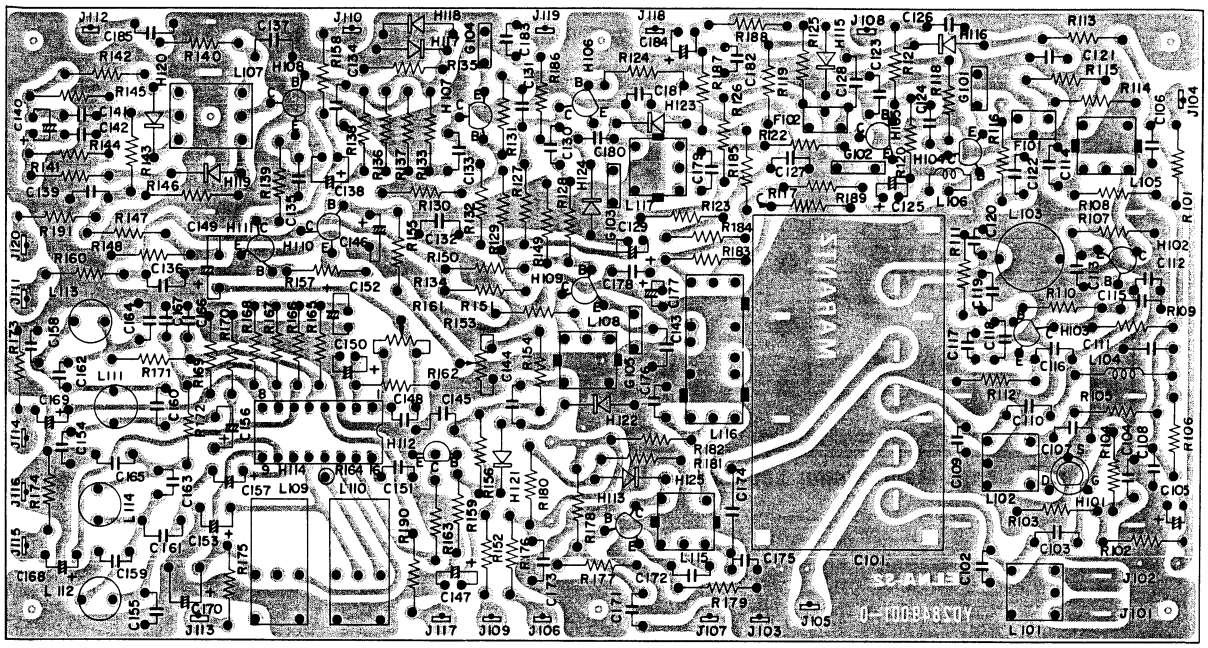

Figure 6. FM/AM Tuner Assembly P100 Component Locations

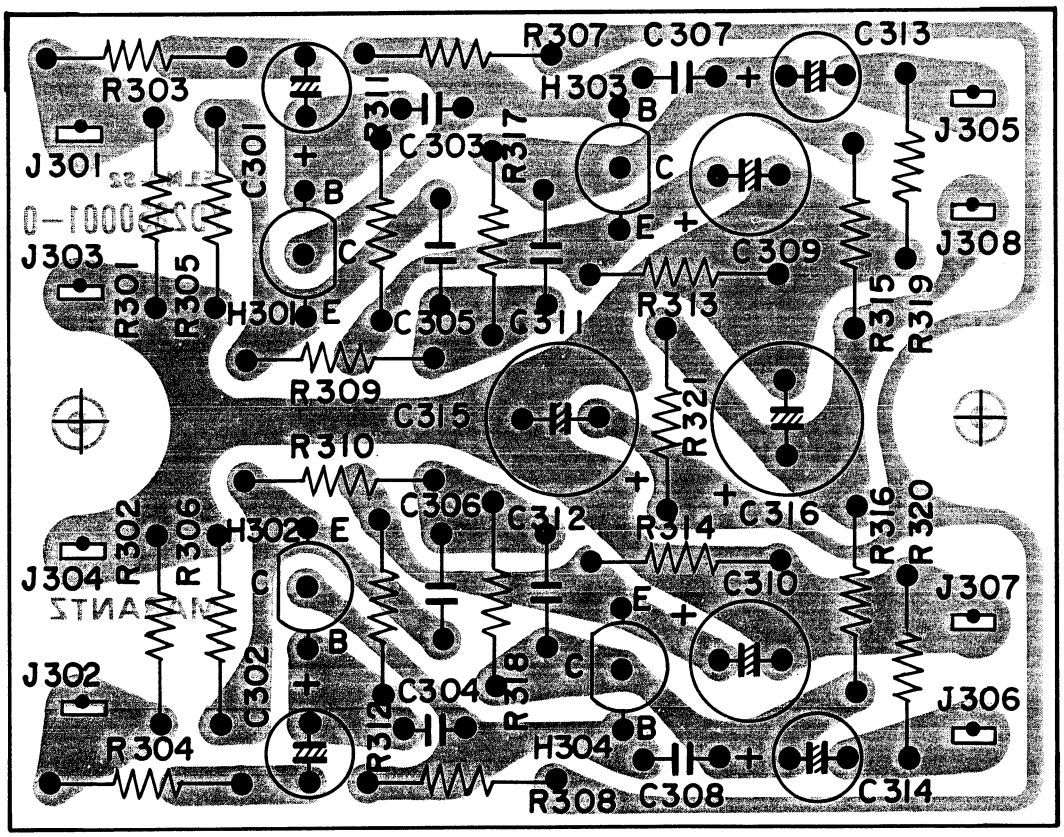

Figure 7. Phono Amplifier Assembly P300 Component Locations

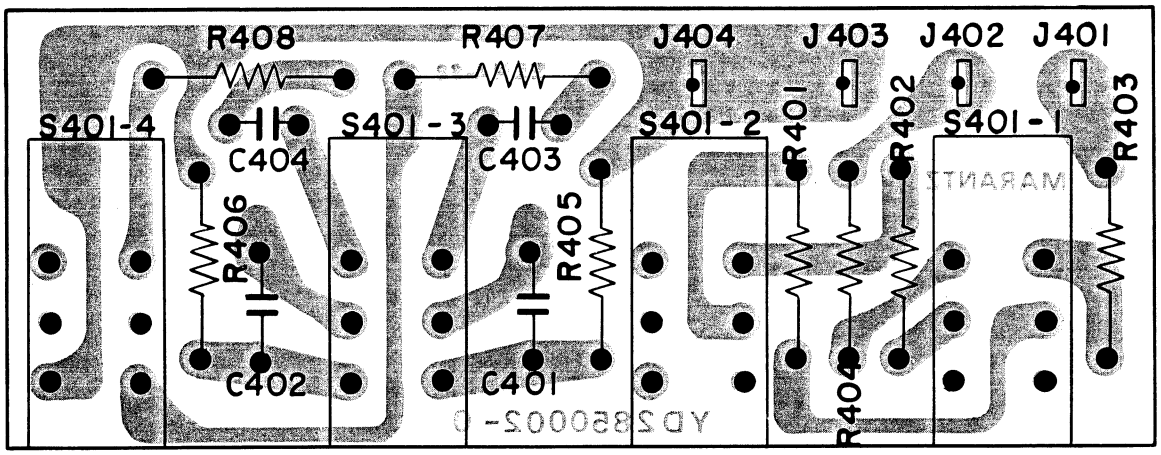

Figure 8. Tape Moni, Mono, Loudness and Muting Switch Unit Assembly P400 Component Locations

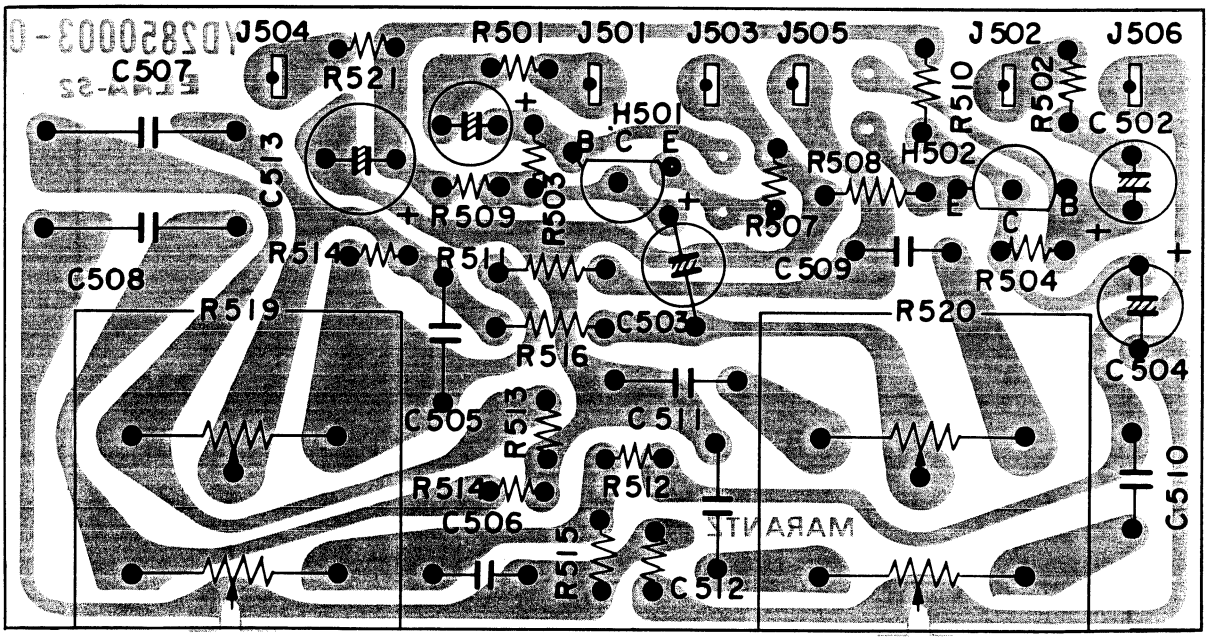

Figure 9. Tone Amplifier Assembly P500 Component Locations

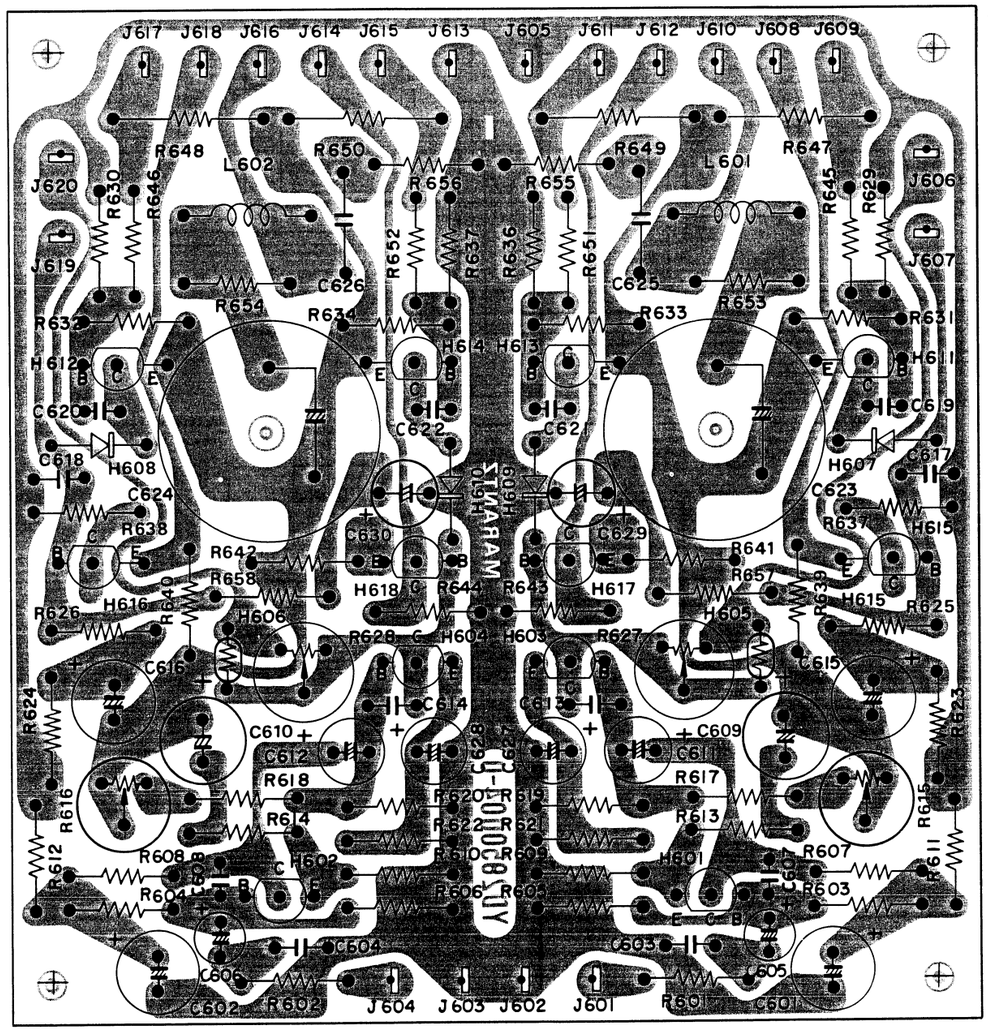

Figure 10. Power Amplifier Assembly P600 Component Locations

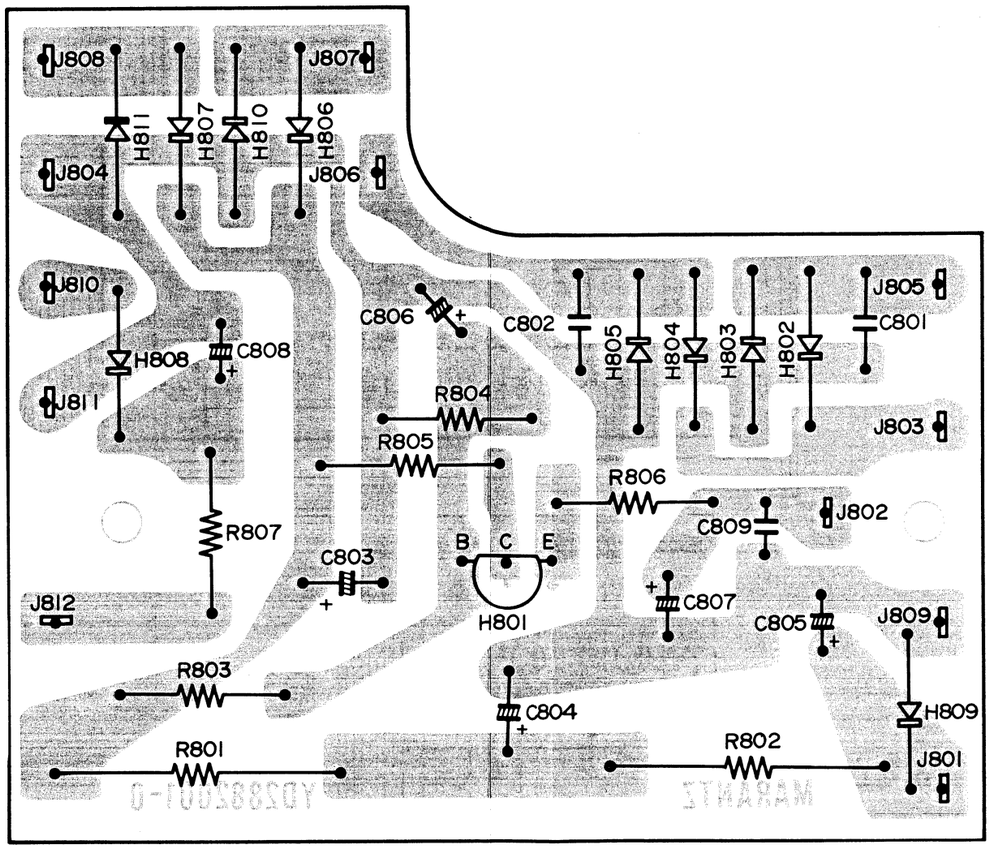

Figure 11. Power Supply Assembly P800 Component Locations

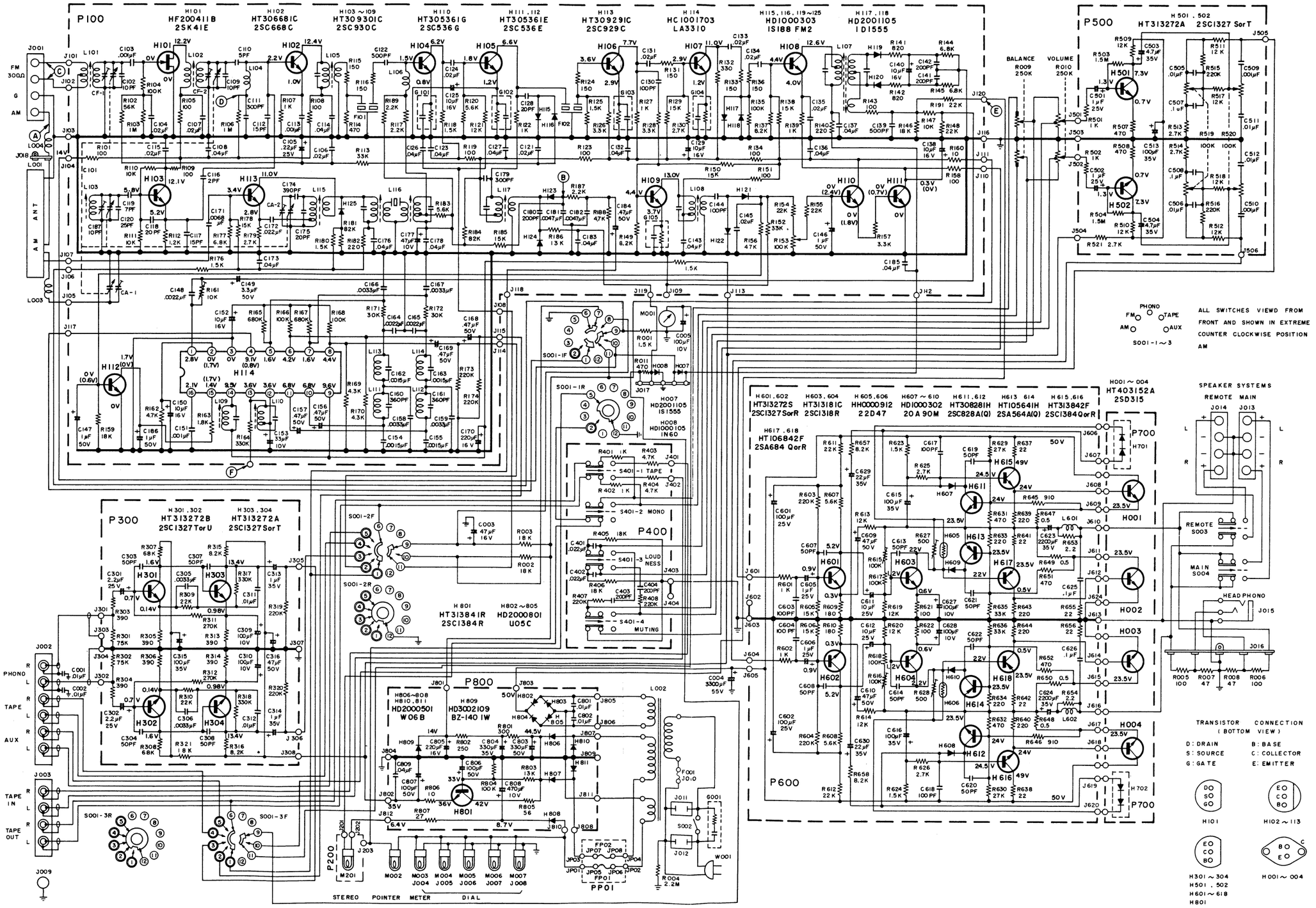

Figure 12. Schematic Diagram

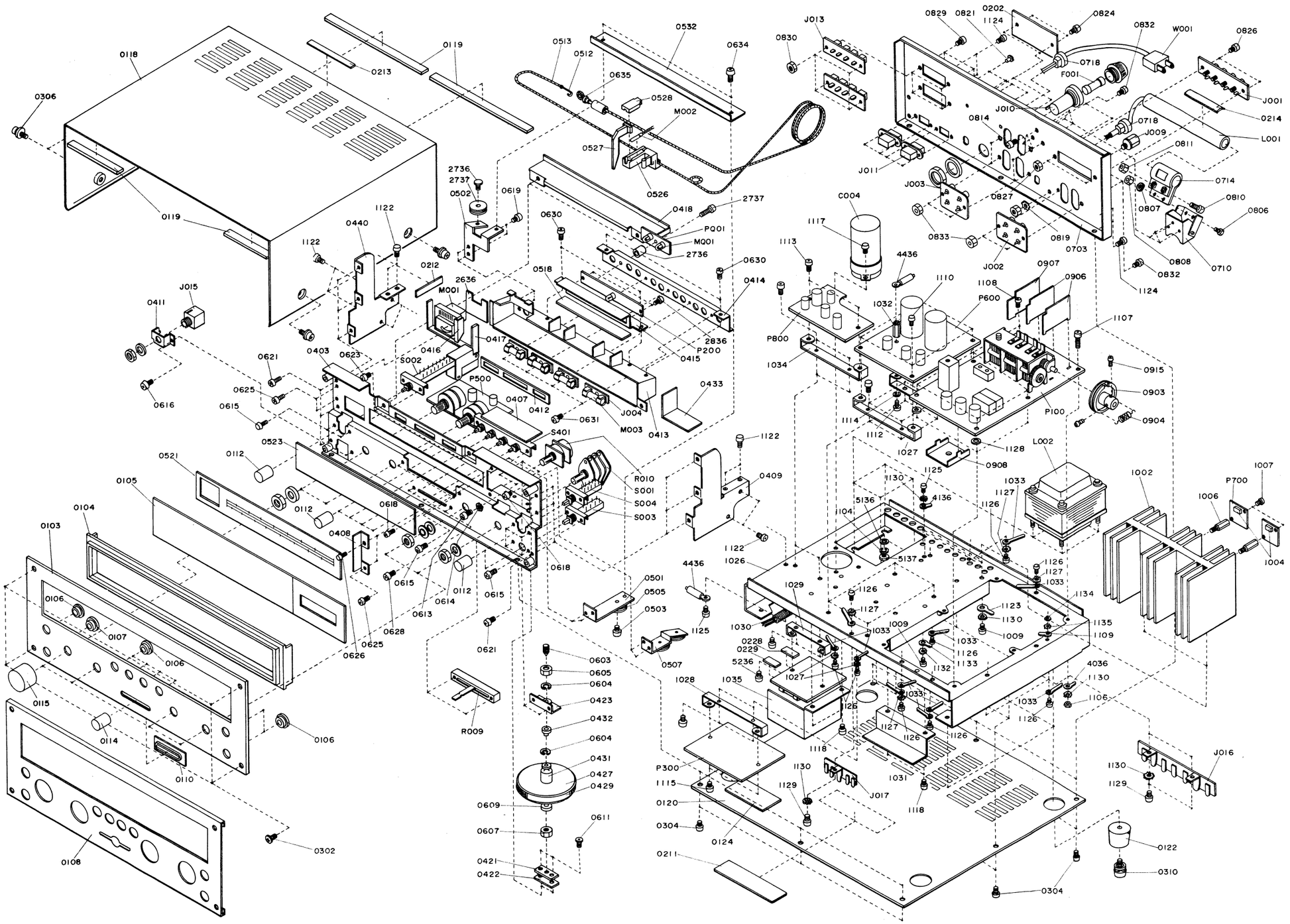

Figure 13. Exploded Mechanical Diagram

PARTS LIST

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
P100	YD2849001	P.W. Board, Tuner
	ZZ2882101	P.W. Board Ass'y
		RESISTORS
		All resistors are ±5% and ¼W, unless otherwise indicated.
R101	RT0510114	100Ω
R102	RT0556314	56KΩ
R103	RT0510514	1MΩ
R104	RT0510414	100KΩ
R105	RT0510114	100Ω
R106	RT0510514	1MΩ
R107	RT0510214	1KΩ
R108	RT0510114	100Ω
R109	RT0510114	100Ω
R110	RT0510314	10KΩ
R111	RT0510314	10KΩ
R112	RT0512214	1.2KΩ
R113	RT0533314	33KΩ
R114	RT0547114	470Ω
R115	RT0515114	150Ω
R116	RT0515114	150Ω
R117	RT0522214	2.2KΩ
R118	RT0515214	1.5KΩ
R119	RT0510114	100Ω
R120	RT0556214	5.6KΩ
R121	RT0512314	12KΩ
R122	RT0510214	1KΩ
R123	RT0510114	100Ω
R124	RT0515114	150Ω
R125	RT0515214	1.5KΩ
R126	RT0533214	3.3KΩ
R127	RT0510214	1KΩ
R128	RT0533214	3.3KΩ
R129	RT0515314	15KΩ
R130	RT0527214	2.7KΩ
R131	RT0515114	150Ω
R132	RT0533114	330Ω
R133	RT0515114	150Ω
R134	RT0510114	100Ω
R135	RT0510414	100KΩ
R136	RT0515114	150Ω
R137	RT0582214	8.2KΩ
R138	RT0515314	15KΩ
R139	RT0510214	1KΩ
R140	RT0522114	220Ω
R141	RT0582114	820Ω
R142	RT0582114	820Ω
R143	RT0510114	100Ω
R144	RT0568214	6.8KΩ
R145	RT0568214	6.8KΩ
R146	RT0518314	18KΩ
R147	RT0510314	10KΩ
R148	RT0522314	22KΩ
R149	RT0582214	8.2KΩ
R150	RT0515314	15KΩ
R151	RT0510114	100Ω
R152	RT0533314	33KΩ
R153	RA0104015	Trimming, 100KΩ (B)
R154	RT0522314	22KΩ
R155	RT0522314	22KΩ
R156	RT0547314	47KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R157	RT0533214	3.3KΩ
R158	RT0510114	100Ω
R159	RT0518314	18KΩ
R160	RT0510014	10Ω
R161	RA0103020	Trimming, 10KΩ (B)
R162	RT0547214	4.7KΩ
R163	RT0518214	1.8KΩ
R164	RC1033412	330KΩ ±10%, ½W
R165	RT0568414	680KΩ
R166	RT0510414	100KΩ
R167	RT0568414	680KΩ
R168	RT0510414	100KΩ
R169	RT0543214	4.3KΩ
R170	RT0543214	4.3KΩ
R171	RT0530314	30KΩ
R172	RT0530314	30KΩ
R173	RT0522414	220KΩ
R174	RT0522414	220KΩ
R175	GT0515212	1.5KΩ ±5%, ½W
R176	RT0515214	1.5KΩ
R177	RT0568214	6.8KΩ
R178	RT0515314	15KΩ
R179	RT0527214	2.7KΩ
R180	RT0515214	1.5KΩ
R181	RT0582314	82KΩ
R182	RT0510114	100Ω
R183	RT0556214	5.6KΩ
R184	RT0582314	82KΩ
R185	RT0515314	15KΩ
R186	RT0513314	13KΩ
R187	RT0522214	2.2KΩ
R188	RT0547214	4.7KΩ
R189	RT0522214	2.2KΩ
R191	RT0522314	22KΩ
		CAPACITORS
C101	CA3240007	Variable, FM-3, AM-2, Gang
C102	DD1210001	Ceramic, 10PF ±10%
C103	DK1710201	Ceramic, 0.001μF ±20%
C104	DK1820302	Ceramic, 0.02μF +100%, -0%
C105	EM2240251	Electroly, 0.22μF, 25V
C106	DK1820302	Ceramic, 0.02μF +100%, -0%
C107	DK1820302	Ceramic, 0.02μF +100%, -0%
C108	DK1840302	Ceramic, 0.04μF +80%, -20%
C109	DD1210001	Ceramic, 10PF ±10%
C110	DD1105001	Ceramic, 5PF ±0.5PF
C111	DD1530101	Ceramic, 300PF ±5%
C112	DD1615003	Ceramic, 15PF ±10%
C113	DK1710201	Ceramic, 0.001μF ±20%
C114	DK1840302	Ceramic, 0.04μF +80%, -20%
C115	DK1820302	Ceramic, 0.02μF +100%, -0%
C116	DD1102004	Ceramic, 2PF ±0.5PF
C117	DD1615003	Ceramic, 15PF ±10%
C118	DD1520001	Ceramic, 20PF ±5%
C119	DD1207003	Ceramic, 7PF ±1PF
C120	DD1525002	Ceramic, 25PF ±5%
C121	DK1820302	Ceramic, 0.02μF +100%, -0%
C122	DD1650101	Ceramic, 500PF ±10%
C123	DK1840302	Ceramic, 0.04μF +80%, -20%
C124	DK1820302	Ceramic, 0.02μF +100%, -0%
C125	EA1060169	Electroly, 10μF, 16V
C126	DK1840302	Ceramic, 0.04μF +80%, -20%

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C127	DK1840302	Ceramic, 0.04μF +80%, -20%
C128	DD1620001	Ceramic, 20PF ±10%
C129	EA1060169	Electroly, 10μF, 16V
C130	DD1610101	Ceramic, 100PF ±10%
C131	DK1820302	Ceramic, 0.02μF +100%, -0%
C132	DK1840302	Ceramic, 0.04μF +80%, -20%
C133	DK1820302	Ceramic, 0.02μF +100%, -0%
C134	DK1820302	Ceramic, 0.02μF +100%, -0%
C135	DK1820302	Ceramic, 0.02μF +100%, -0%
C136	DK1840302	Ceramic, 0.04μF +80%, -20%
C137	DK1840302	Ceramic, 0.04μF +80%, -20%
C138	EA1060169	Electroly, 10μF, 16V
C139	DD1650101	Ceramic, 500PF ±10%
C140	EA1060169	Electroly, 10μF, 16V
C141	DD1620101	Ceramic, 200PF ±10%
C142	DD1620101	Ceramic, 200PF ±10%
C143	DK1840302	Ceramic, 0.04μF +80%, -20%
C144	DD1610101	Ceramic, 100PF ±10%
C145	DK1820302	Ceramic, 0.02μF +100%, -0%
C146	EA1050509	Electroly, 1μF, 50V
C147	EA1050509	Electroly, 1μF, 50V
C148	DF1722201	Film, 0.0022μF ±20%
C149	EA3350509	Electroly, 3.3μF, 50V
C150	EA1060169	Electroly, 10μF, 16V
C151	DF1610201	Film, 0.001μF ±10%
C152	EA1060169	Electroly, 10μF, 16V
C153	EA3360109	Electroly, 33μF, 10V
C154	DF1615205	Film, 0.0015μF ±10%
C155	DF1615205	Film, 0.0015μF ±10%
C156	EA4740501	Electroly, 0.47μF, 50V
C157	EA4740501	Electroly, 0.47μF, 50V
C158	DF1633205	Film, 0.0033μF ±10%
C159	DF1633205	Film, 0.0033μF ±10%
C160	DD1536101	Ceramic, 360PF ±5%
C161	DD1536101	Ceramic, 360PF ±5%
C162	DF1515205	Film, 0.0015μF ±5%
C163	DF1515205	Film, 0.0015μF ±5%
C164	DF1622205	Film, 0.0022μF ±10%
C165	DF1622205	Film, 0.0022μF ±10%
C166	DF1533205	Film, 0.0033μF ±5%
C167	DF1533205	Film, 0.0033μF ±5%
C168	EA4740501	Electroly, 0.47μF, 50V
C169	EA4740501	Electroly, 0.47μF, 50V
C170	EA2270169	Electroly, 220μF, 16V
C171	DF1768201	Film, 0.0068μF ±20%
C172	DF1722301	Film, 0.022μF ±20%
C173	DF1740301	Film, 0.04μF ±20%
C174	DF6539101	Film, 390PF ±5%
C175	DD1620001	Ceramic, 20PF ±10%
C176	DF1740301	Film, 0.04μF ±20%
C177	EA4760109	Electroly, 47μF, 10V
C178	DK1840302	Ceramic, 0.04μF +80%, -20%
C179	DD1530101	Ceramic, 300PF ±5%
C180	DD1620101	Ceramic, 200PF ±10%
C181	DF1647201	Film, 0.0047μF ±10%
C182	DF1647201	Film, 0.0047μF ±10%
C183	DK1840302	Ceramic, 0.04μF +80%, -20%
C184	EV2240251	Electroly, 0.22μF, 25V
C185	DK1840302	Ceramic, 0.04μF +80%, -20%
C186	EA1050509	Electroly, 1μF, 50V
C187	CT1100008	Trimming, 10PF

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
		COILS & TRANSFORMERS
L101	LA1004606	Ant. Coil, FM
L102	LA1027809	RF Coil, FM
L103	LO1203601	OSC Coil, FM
L104	LC1751001	Choke Coil, 0.75μH
L105	LI1001601	IFT, FM
L106	LC1223002	Choke Coil, 22μH
L107	LI1401623	IFT, FM
L108	LI1015602	IFT, FM
L109	LS1031001	MPX Coil, 19 KHz
L110	LS1031004	MPX Coil, 38 KHz
L111	LC2576001	Choke Coil, 57mH
L112	LC2576001	Choke Coil, 57mH
L113	LC2446001	Choke Coil, 44mH
L114	LC2446001	Choke Coil, 44mH
L115	LO1001042	OSC Coil, AM
L116	LI1028002	IFT, AM
L117	LI1001048	IFT, AM
		SEMICONDUCTORS
H101	HF200411B	FET, 2SK41E
H102	HT306681C	Transistor, 2SC668C
H103	HT309301C	Transistor, 2SC930C
H104	HT309301C	Transistor, 2SC930C
H105	HT309301C	Transistor, 2SC930C
H106	HT309301C	Transistor, 2SC930C
H107	HT309301C	Transistor, 2SC930C
H108	HT309301C	Transistor, 2SC930C
H109	HT309301C	Transistor, 2SC930C
H110	HT305361G	Transistor, 2SC536G
H111	HT305361E	Transistor, 2SC536E
H112	HT305361E	Transistor, 2SC536E
H113	HT309291C	Transistor, 2SC929C
H114	HC1001703	IC LA3310
H115	HD1000303	Diode, 1S188FM2
H116	HD1000303	Diode, 1S188FM2
H117	HD2001105	Diode, 1S1555
H118	HD2001105	Diode, 1S1555
H119	HD1000303	Diode, 1S188FM2
H120	HD1000303	Diode, 1S188FM2
H121	HD1000303	Diode, 1S188FM2
H122	HD1000303	Diode, 1S188FM2
H123	HD1000303	Diode, 1S188FM2
H124	HD1000303	Diode, 1S188FM2
H125	HD1000303	Diode, 1S188FM2
		MISCELLANEOUS
G101	BF4030001	Printed Compo., 0.04μF +270Ω
G102	BF2230008	Printed Compo., 0.022μF +270Ω
G103	BF2230007	Printed Compo., 0.022μF +680Ω
G104	BF2230006	Printed Compo., 0.022μF +1KΩ
G105	BF2230006	Printed Compo., 0.022μF +1KΩ
F101	FF1107004	Ceramic Filter, CFS107M
F102	FF1107004	Ceramic Filter, CFS107M
J101	YP1000099	Plug
J102	YP1000099	Plug
J103	YP1000099	Plug
J104	YP1000099	Plug
J105	YP1000099	Plug
J106	YP1000099	Plug

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J107	YP1000099	Plug
J108	YP1000099	Plug
J109	YP1000099	Plug
J110	YP1000099	Plug
J111	YP1000099	Plug
J112	YP1000099	Plug
J113	YP1000099	Plug
J114	YP1000099	Plug
J115	YP1000099	Plug
J116	YP1000099	Plug
J117	YP1000099	Plug
J118	YP1000099	Plug
J119	YP1000099	Plug
J120	YP1000099	Plug
0906	282110901	Shield x 2
0907	286710901	Shield
0908	285010902	Shield
1109	62031650W	Lug
P300	YD2850001	P.W. Board, Phono
	ZZ2882201	P.W. Board Ass'y
		RESISTORS
		All resistors are ±5% and ¼W.
R301	RT0575314	75KΩ
R302	RT0575314	75KΩ
R303	RT0539114	390Ω
R304	RT0539114	390Ω
R305	RT0539114	390Ω
R306	RT0539114	390Ω
R307	RT0568314	68KΩ
R308	RT0568314	68KΩ
R309	RT0522314	22KΩ
R310	RT0522314	22KΩ
R311	RT0527414	270KΩ
R312	RT0527414	270KΩ
R313	RT0539114	390Ω
R314	RT0539114	390Ω
R315	RT0582214	8.2KΩ
R316	RT0582214	8.2KΩ
R317	RT0533414	330KΩ
R318	RT0533414	330KΩ
R319	RT0522414	220KΩ
R320	RT0522414	220KΩ
R321	RT0518314	18KΩ
		CAPACITORS
C301	EV3350256	Electroly, 3.3μF ±20%, 25V
C302	EV3350256	Electroly, 3.3μF ±20%, 25V
C303	DD1650001	Ceramic, 50PF ±10%, 50V
C304	DD1650001	Ceramic, 50PF ±10%, 50V
C305	DF1633205	Film, 0.0033μF ±10%, 50V
C306	DF1633205	Film, 0.0033μF ±10%, 50V
C307	DD1650001	Ceramic, 50PF ±10%, 50V
C308	DD1650001	Ceramic, 50PF ±10%, 50V
C309	EA1070109	Electroly, 100μF, 10V
C310	EA1070109	Electroly, 100μF, 10V
C311	DF1610305	Film, 0.01μF ±10%, 50V
C312	DF1610305	Film, 0.01μF ±10%, 50V
C313	EV1050351	Electroly, 1μF ±20%, 35V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C314	EV1050351	Electroly, 1μF ±20%, 35V
C315	EA1070359	Electroly, 100μF, 35V
C316	EA4760509	Electroly, 47μF, 50V
		SEMICONDUCTORS
H301	HT313272B	Transistor, 2SC1327 (T) ,(U)
H302	HT313272B	Transistor, 2SC1327 (T) ,(U)
H303	HT313272A	Transistor 2SC1327 (S) ,(T)
H304	HR313272A	Transistor 2SC1327 (S) ,(T)
		MISCELLANEOUS
J301	YP1000094	Plug
J302	YP1000094	Plug
J303	YP1000094	Plug
J304	YP1000094	Plug
J305	YP1000094	Plug
J306	YP1000094	Plug
J307	YP1000094	Plug
J308	YP1000094	Plug
P600	YD2850004	P.W. Board, Main
	ZZ2882104	P.W. Board, Ass'y
		RESISTORS
		All resistors are ±5% and ¼W, unless otherwise indicated.
R601	RT0510214	1KΩ
R602	RT0510214	1KΩ
R603	RT0522414	220KΩ
R604	RT0522414	220KΩ
R605	RT0515314	15KΩ
R606	RT0515314	15KΩ
R607	RT0556214	5.6KΩ
R608	RT0556214	5.6KΩ
R609	RT0518114	180Ω
R610	RT0518114	180Ω
R611	RT0522314	22KΩ
R612	RT0522314	22KΩ
R613	RT0512314	12KΩ
R614	RT0512314	12KΩ
R615	RA0104015	Trimming, 100KΩ (B)
R616	RA0104015	Trimming, 100KΩ (B)
R617	RT0510414	100KΩ
R618	RT0510414	100KΩ
R619	RT0512314	12KΩ
R620	RT0512314	12KΩ
R621	RT0510114	100Ω
R622	RT0510114	100Ω
R623	RT0515214	1.5KΩ
R624	RT0515214	1.5KΩ
R625	RT0527214	2.7KΩ
R626	RT0527214	2.7KΩ
R627	RA0501009	Trimming, 500Ω (B)
R628	RA0501009	Trimming, 500Ω (B)
R629	RT0527314	27KΩ
R630	RT0527314	27KΩ
R631	GF0547114	470Ω
R632	GF0547114	470Ω
R633	GF0522114	220Ω
R634	GF0522114	220Ω
R635	RT0533314	33KΩ
R636	RT0533314	33KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R637	GF0522014	22Ω
R638	GF0522014	22Ω
R639	GF0522114	220Ω
R640	GF0522114	220Ω
R641	GF0522014	22Ω
R642	GF0522014	22Ω
R643	GF0522114	220Ω
R644	GF0522114	220Ω
R645	GF0591114	910Ω
R646	GF0591114	910Ω
R647	RW1000503	0.5Ω ±10%, 3W
R648	RW1000503	0.5Ω ±10%, 3W
R649	RW1000503	0.5Ω ±10%, 3W
R650	RW1000503	0.5Ω ±10%, 3W
R651	GF0547114	470Ω
R652	GF0547114	470Ω
R653	RC1002212	2.2Ω ±10%, ½W
R654	RC1002212	2.2Ω ±10%, ½W
R655	RC1022012	22Ω ±10%, ½W
R656	RC1022012	22Ω ±10%, ½W
R657	RT0582214	8.2KΩ
R658	RT0582214	8.2KΩ
		CAPACITORS
C601	EA1070259	Electroly, 100μF, 25V
C602	EA1070259	Electroly, 100μF, 25V
C603	DD1610101	Ceramic, 100PF ±10%
C604	DD1610101	Ceramic, 100PF ±10%
C605	EM1050251	Electroly, 1μF ±20%, 25V
C606	EM1050251	Electroly, 1μF ±20%, 25V
C607	DD1650001	Ceramic, 50PF ±10%
C608	DD1650001	Ceramic, 50PF ±10%
C609	EA4760509	Electroly, 47μF, 50V
C610	EA4760509	Electroly, 47μF, 50V
C611	EA1060259	Electroly, 10μF, 25V
C612	EA1060259	Electroly, 10μF, 25V
C613	DD1650001	Ceramic, 50PF ±10%
C614	DD1650001	Ceramic, 50PF ±10%
C615	EA1070359	Electroly, 100μF, 35V
C616	EA1070359	Electroly, 100μF, 35V
C617	DD1610101	Ceramic, 100PF ±10%
C618	DD1610101	Ceramic, 100PF ±10%
C619	DD1650001	Ceramic, 50PF ±10%
C620	DD1650001	Ceramic, 50PF ±10%
C621	DD1650001	Ceramic, 50PF ±10%
C622	DD1650001	Ceramic, 50PF ±10%
C623	EB2280354	Electroly, 2200μF, 35V
C624	EB2280354	Electroly, 2200μF, 35V
C625	DF1710405	Film, 0.1μF ±20%, 50V
C626	DF1710405	Film, 0.1μF ±20%, 50V
C627	EA1070109	Electroly, 100μF, 10V
C628	EA1070109	Electroly, 100μF, 10V
C629	EA2260359	Electroly, 22μF, 35V
C630	EA2260359	Electroly, 22μF, 35V
		SEMICONDUCTORS
H601	HT313272A	Transistor, 2SC1327 S or R
H602	HT313272A	Transistor, 2SC1327 S or R
H603	HT313181C	Transistor, 2SC1318 (R)
H604	HT313181C	Transistor, 2SC1318 (R)
H605	HH0000912	Thermistor, 22D47
H606	HH0000912	Thermistor, 22D47
H607	HD1000302	Diode, 20A90M

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
H608	HD1000302	Diode, 20A90M
H609	HD1000302	Diode, 20A90M
H610	HD1000302	Diode, 20A90M
H611	HT308281H	Transistor, 2SC828A (Q)
H612	HT308281H	Transistor, 2SC828A (Q)
H613	HT105641H	Transistor, 2SA564A (Q)
H614	HT105641H	Transistor, 2SA564A (Q)
H615	HT313842F	Transistor, 2SC1384Q or R
H616	HT313842F	Transistor, 2SC1384Q or R
H617	HT106842F	Transistor, 2SA684Q or R
H618	HT106842F	Transistor, 2SA684Q or R
		MISCELLANEOUS
J601	YP1000099	Plug
J602	YP1000099	Plug
J603	YP1000099	Plug
J604	YP1000099	Plug
J605	YP1000099	Plug
J606	YP1000099	Plug
J607	YP1000099	Plug
J608	YP1000099	Plug
J609	YP1000099	Plug
J610	YP1000099	Plug
J611	YP1000099	Plug
J612	YP1000099	Plug
J613	YP1000099	Plug
J614	YP1000099	Plug
J615	YP1000099	Plug
J616	YP1000099	Plug
J617	YP1000099	Plug
J618	YP1000099	Plug
J619	YP1000099	Plug
J620	YP1000099	Plug
J621	YP1000099	Plug
J622	YP1000099	Plug
J623	YP1000099	Plug
J624	YP1000099	Plug
L601	LL2391512	Choke Coil
L602	LL2391512	Choke Coil
1032	285010101	Support
1112	51100205E	B.H.M. Screw
1114	54040202N	Spring Washer
P800	YD2882001	P.W. Board, Power
	ZZ2882001	P.W. Board Ass'y
		RESISTORS
R801	GS1030103	300Ω ±10%, 3W
R802	GJ1025102	250Ω ±10%, 2W
R803	RT0513314	13KΩ ±5%, ¼W
R804	RT0510414	100KΩ ±5%, ¼W
R805	RC1056012	56Ω ±10%, ½W
R806	RC1010012	10Ω ±10%, ½W
R807	RT0527014	27Ω ±5%, ¼W
		CAPACITORS
C801	DK1810351	0.01μF +100%, -0%, 500V
C802	DK1810351	0.01μF +100%, -0%, 500V
C803	EA3370509	330μF, 50V
C804	EA3370359	330μF, 35V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C805	EA2270169	220μF, 16V
C806	EA1070509	100μF, 50V
C807	EA1070509	100μF, 50V
C808	EA4770109	470μF, 10V
C809	DK1840302	0.04μF, +100%, -0%
		SEMICONDUCTORS
H801	HT313841R	Transistor 2SC1384 (R)
H802	HD2000801	Diode, U05C
H803	HD2000801	Diode, U05C
H804	HD2000801	Diode, U05C
H805	HD2000801	Diode, U05C
H806	HD2000501	Diode, W06B
H807	HD2000501	Diode, W06B
H808	HD2000501	Diode, W06B
H809	HD3002109	Diode, BZ-140 1W
H810	HD2000501	Diode, W06B
H811	HD2000501	Diode, W06B
		MISCELLANEOUS
J801	YP1000099	Plug
J802	YP1000099	Plug
J803	YP1000099	Plug
J804	YP1000099	Plug
J805	YP1000099	Plug
J806	YP1000099	Plug
J807	YP1000099	Plug
J808	YP1000099	Plug
J809	YP1000099	Plug
J810	YP1000099	Plug
J811	YP1000099	Plug
J812	YP1000099	Plug
0403	285016050	Bracket, K
0408	285020101	Partitioner
0409	285016003	Bracket
0410	285016004	Bracket
0412	285012201	Sticker
0421	257710602	Bearing
0422	141511801	Spacer
0507	285016051	Bracket K
0611	51040306A	F.H.M. Screw x 2
0615	51100306A	B.H.M. Screw x 8
0616	51100306A	B.H.M. Screw
0618	51100306A	B.H.M. Screw x 4
0621	51100306A	B.H.M. Screw x 6
0623	51100306A	B.H.M. Screw x 2
0625	51100306A	B.H.M. Screw x 3
0626	51100306A	B.H.M. Screw
0628	51102604A	B.H.M. Screw x 2
S001	SR0805022	Rotary Switch, Function
R001	GT0515212	Resistor, 1.5KΩ ±5%, ½W
R002	RT0518314	Resistor, 18KΩ ±5%, ¼W
R003	RT0518314	Resistor, 18KΩ ±5%, ¼W
C003	EA4760169	Electroly Cap., 47μF, 16V
S004	SP0201009	Push Switch, Speaker
S003	SP0201009	Push Switch, Speaker
1030	288210901	Shield

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
0411	285027101	Holder
J015	YJ0100065	Jack, Phone
R009	RS0254004	Variable Resist., Balance, 250KΩ(BH)
R010	RM0254022	Variable Resist., Volume, 250KΩ (B)
S002	SP0301001	Push Switch, Power
G001	BF1040001	Printed Compo., 0.1μF/120Ω
M001	IM1104208	DC Meter, Tuning
0416	285012003	Insulator
0417	285011801	Spacer
C005	EA1070109	Electroly Cap., 100μF, 10V
0501	285016009	Bracket
0503	263711203	Shaft
0505	257726201	Pulley
0502	285016008	Bracket
2736	263711203	Shaft
2737	257726201	Pulley
0414	281827101	Holder
0631	51570306B	P.H. Tapt Screw x 5
J004	YJ0800019	Socket, Dial Illumination
J005	YJ0800019	Socket, Dial Illumination
J006	YJ0800019	Socket, Dial Illumination
J007	YJ0800019	Socket, Dial Illumination
J008	YJ0800019	Socket, Dial Illumination
M003	IN1008007	Lamp, Dial Illumination
M004	IN1008007	Lamp, Dial Illumination
M005	IN1008007	Lamp, Dial Illumination
M006	IN1008007	Lamp, Dial Illumination
M007	IN1008007	Lamp, Dial Illumination
0415	282716003	Bracket
0518	282710701	Sheet
P200	YD2849002	P.W. Board, Lamp
	ZZ2849002	P.W. Board Ass'y
M201	IN1006301	Lamp
J201	YP1000099	Plug
J202	YP1000099	Plug
J203	YP1000099	Plug
0407	288212001	Insulator
0413	282727401	Reflector
0619	51570306B	P.H. Tapt Screw x 2
0630	51570305B	P.H. Tapt Screw x 4
P400	YD2850002	P.W. Board, Switch
	ZZ2850002	P.W. Board Ass'y
		RESISTORS
R401	RT0510214	1KΩ ±5%, ¼W

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REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R402	RT0510214	1KΩ ±5%, ¼W
R403	RT0547214	4.7KΩ ±5%, ¼W
R404	RT0547214	4.7KΩ ±5%, ¼W
R405	RT0518314	18KΩ ±5%, ¼W
R406	RT0518314	18KΩ ±5%, ¼W
R407	RT0522414	220KΩ ±5%, ¼W
R408	RT0522414	220KΩ ±5%, ¼W
		CAPACITORS
C401	DF1622305	Film Cap., 0.022μF ±10%, 50V
C402	DF1622305	Film Cap., 0.022μF ±10%, 50V
C403	DF1620101	Ceramic Cap., 200PF ±10%, 50V
C404	DD1620101	Ceramic Cap., 200PF ±10%, 50V
		MISCELLANEOUS
S401	SP0204003	Push Switch, Tape/Mono/Loudness/Muting
J401	YP1000099	Plug
J402	YP1000099	Plug
J403	YP1000099	Plug
J404	YP1000099	Plug
0418	282705101	Guide
P500	YD2850003	P.W. Board, Tone
	ZZ2882103	P.W. Board Ass'y
		RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R501	RT0510214	1KΩ
R502	RT0510214	1KΩ
R503	RT0515514	1.5MΩ
R504	RT0515514	1.5MΩ
R507	RT0547114	470Ω
R508	RT0547114	470Ω
R509	RT0512314	12KΩ
R510	RT0512314	12KΩ
R511	RT0512314	12KΩ
R512	RT0512314	12KΩ
R513	RT0527214	2.7KΩ
R514	RT0527214	2.7KΩ
R515	RT0522414	220KΩ
R516	RT0522414	220KΩ
R517	RT0512314	12KΩ
R518	RT0512314	12KΩ
R519	RM0104006	Variable, 100KΩ (A)
R520	RM0104006	Variable, 100KΩ (A)
R521	RT0527214	2.7KΩ
		CAPACITORS
C501	EM1050251	Electroly, 1μF ±20%, 25V
C502	EM1050251	Electroly, 1μF ±20%, 25V
C503	EA4750359	Electroly, 4.7μF, 35V
C504	EA4750359	Electroly, 4.7μF, 35V
C505	DF1610305	Film, 0.01μF ±10%, 50V
C506	DF1610305	Film, 0.01μF ±10%, 50V
C507	DF1610405	Film, 0.1μF ±10%, 50V
C508	DF1610405	Film, 0.1μF ±10%, 50V
C509	DF1610205	Film, 0.001μF ±10%, 50V
C510	DF1610205	Film, 0.001μF ±10%, 50V
C511	DF1610305	Film, 0.01μF ±10%, 50V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C512	DF1610305	Film, 0.01μF ±10%, 50V
C513	EA1070359	Electroly, 100μF, 35V
		MISCELLANEOUS
J501	YP1000094	Plug
J502	YP1000094	Plug
J503	YP1000094	Plug
J504	YP1000094	Plug
J505	YP1000094	Plug
J506	YP1000094	Plug
H501	HT313272A	Transistor, 2SC1327 S or T
H502	HT313272A	Transistor, 2SC1327 S or T
E	288216040	Bracket Ass'y
0703	288216001	Bracket
0816	53110403E	Hexagon Nut
0818	54020401E	Flat Washer P
0819	54050400R	T.L. Washer OR
0821	55060365S	T.R. Rivet x 4
0826	51100308S	B.H.M. Screw x 2
0827	53110303E	Hexagon Nut x 2
0829	51100308S	B.H.M. Screw x 4
0830	53110303E	Hexagon Nut x 4
0832	51100308S	B.H.M. Screw x 4
0833	53110303E	Hexagon Nut x 4
J001	YT0104004	Terminal, FM/AM Ext. Antenna
J002	YT0206003	Terminal, Phono/Tape/Aux
J003	YT0204003	Terminal, Tape In/Tape Out
J009	YT0101003	Terminal, Ground
J010	YJ0800012	Socket, Fuse
J011	YJ0400018	Jack, Outlet
J012	YJ0400018	Jack, Outlet
J013	YT0304001	Terminal, Speaker
J014	YT0304001	Terminal, Speaker
0718	145525903	Bush x 2
0814	51100306S	B.H.M. Screw x 3
J018	YL0102003	Terminal, 2P Lug
F001	FS1020006	Fuse, UL 250V/2A, 30L
W001	YC0240010	AC Cord
L004	LC1154002	Choke Coil, 150μH
L001	LF1120024	Ant. Coil, AM
0710	257816052	Bracket K
0714	281927103	Holder
0806	51100308S	B.H.M. Screw x 2
0807	54050300R	T.L. Washer OR x 2
0808	53110303F	Hexagon Nut x 2
0810	51100310S	B.H.M. Screw x 2
0811	53110303E	Hexagon Nut x 2
L003	LC1332002	Choke Coil, 3.3μH
R004	GT0522512	Resistor, 2.2MΩ ±5%, ½W
1133	62031650W	Lug, Earth

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
1002	288226701	Heat Sink
1006	288210101	Support x 4
1007	51060306A	P.H.M. Screw x 4
H001	HT403152A	Transistor, 2SD315
H002	HT403152A	Transistor, 2SD315
H003	HT403152A	Transistor, 2SD315
H004	HT403152A	Transistor, 2SD315
P700	YD2882002	P.W. Board, Comp. x 2
	ZZ2882002	P.W. Board Ass'y
		MISCELLANEOUS
H701	HV0000212	Varistor, SV-3A x 2
I004	288211801	Spacer x 2
C004	EC3380551	Electroly Cap., 3300μF, 55V
C001	DK1710301	Ceramic Cap., 0.01μF ±20%
C002	DK1710301	Ceramic Cap., 0.01μF ±20%
4036	62031650W	Lug, Earth
4136	62031650W	Lug, Earth
J016	YL0107005	Terminal, 7P Lug
R005	RJ1010101	Resistor, 100Ω ±10%, 1W
R006	RJ1010101	Resistor, 100Ω ±10%, 1W
R007	RC1047012	Resistor, 47Ω ±10%, ½W
R008	RC1047012	Resistor, 47Ω ±10%, ½W
0903	282715901	Drum
0904	71101569M	Spring
0915	51650304D	Set Screw H.P. x 2
B	285027340	Fly Wheel Ass'y
0427	257706302	Escutcheon x 2
0429	257727301	Fly Wheel
0431	285011201	Shaft
0607	53110603E	Hexagon Nut
0608	54040602N	Spring Washer
0609	54020601E	Flat Washer P
D	285010340	Pointer Ass'y
0526	281810301	Pointer
0527	285010301	Pointer
0528	281805301	Cover
M002	IN1008018	Lamp, Dial Pointer
4436	138200503	Clamper x 2
C	120200640	Dial String Ass'y
0512	120225801	Hook
0513	72080802A	String x 140

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
A	288206340	Escutcheon Ass'y
0103	288206301	Escutcheon
0104	282740101	Frame
0105	282715801	Window
0106	281825905	Bush x 7
0107	273125901	Bush
0108	285005301	Cover
0110	285025901	Bush
J017	YL0105001	Lug, 5P
H007	HD2001105	Diode, 1S1555
H008	HD1000105	Diode, 1N60
R011	RT0547114	Resistor, 470Ω ±5%, ¼W
PP01	YD2882003	P.W. Board, Fuse Mount
	ZZ2882003	P.W. Board Ass'y
		MISCELLANEOUS
JP01	YP1000099	Plug
JP02	YP1000099	Plug
JP03	YP1000099	Plug
JP04	YP1000099	Plug
JP05	YJ0800017	Fuse Socket
JP06	YJ0800017	Fuse Socket
JP07	YJ0800017	Fuse Socket
JP08	YJ0800017	Fuse Socket
0228	951061103	Label, 3A
0229	951061101	Label, 1A
0521	285030201	Dial
0523	282705302	Cover
W002	YW2882001	Wire Material
W003	YX2882001	Wire Material
0122	275905701	Leg x 4
0310	51100410A	B.H.M. Screw x 4
0311	54020401A	Flat Washer P x 4
0312	54040402A	Spring Washer x 4
1009	51060308A	P.H.M. Screw x 2
1031	285010903	Shield
1033	138200503	Clamper x 15
1035	288210904	Shield
1103	51570408B	P.H. Tapt Screw x 4
1104	54040402N	Spring Washer x 4
1106	53110303E	Hexagon Nut
1107	51570310B	P.H. Tapt Screw
1108	51570306B	P.H. Tapt Screw x 5
1110	51100306E	B.H.M. Screw x 4
1113	51100306E	B.H.M. Screw x 2
1115	51100306E	B.H.M. Screw x 2
1117	51570306B	P.H. Tapt Screw x 2
1119	51570310B	P.H. Tapt Screw x 2
1122	51570306B	P.H. Tapt Screw x 8
1123	62031650W	Lug

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REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
1124	51100306S	B.H.M. Screw x 6
1125	51570306B	P.H. Tapt Screw x 2
1126	51570306B	P.H. Tapt Screw x 13
1127	54050300R	T.L. Washer OR x 5
1128	59030805P	Washer x 2
1129	51570306B	P.H. Tapt Screw x 2
1130	54050300R	T.L. Washer OR x 6
1131	51570306B	P.H. Tapt Screw
1132	54050300R	T.L. Washer OR
1134	53110303E	Hexagon Nut
1135	54050300R	T.L. Washer OR
FP01	FS1030006	Fuse Socket
FP02	FS1010008	Fuse Socket
L002	TS1850401	Power Transf.
1026	288210550	Chassis K
1118	51570306B	P.H. Tapt Screw x 4
0112	281815401	Knob x 7
0114	285015401	Knob
0115	282815402	Knob x 4
0118	282725701	Lid
0119	257711803	Spacer x 3
0120	282825702	Lid
0124	352812001	Insulator
0202	288226501	Indicator
0211	257886101	Label, UL Caution
0212	257886102	Label, Do not Remove ·····
0213	257886103	Label, See Marking ·····
0214	250626506	Indicator, Do not Use as ·····
0302	51122608E	T.H.M. Screw x 4
0304	51100406S	B.H.M. Screw x 8
0306	51100406S	B.H.M. Screw x 4
0307	54020401S	Flat Washer P x 4
0423	281810650	Bearing K
0432	285011202	Shaft
0433	284912001	Insulator
0532	282626901	Protector
0603	51640412D	Set Screw C. P.
0604	54040402N	Spring Washer x 2
0605	53110403E	Hexagon Nut
0613	51100306A	B.H.M. Screw x 2
0614	54050300R	T.L. Washer OR x 2
0634	51100304S	B.H.M. Screw x 2
0635	56382540G	Eyelet
0824	51100300S	B.H.M. Screw x 2
1202	288285101	Instructions
1209	288285601	Schematic Diagram
1217	281885104	Instructions
1218	281885108	Instructions
1222	281885110	Instructions
1223	257785450	Guarantee Card K
1302	288280101	Packing Case
1303	288280111	Packing Case
1308	282880301	Partitioner x 2
1312	901383033	Polyethylen Bag
1314	901302501	Polyethylen Bag x 2
1317	102980401	Sleeve
1319	273182101	Silicagel x 2
1320	281905601	Buffer
1322	952281501	Serial NO Card x 4
1331	ZA0200007	Ext. Antenna

TECHNICAL SPECIFICATIONS

AUDIO CIRCUITS:

Rated continuous (RMS) power output
per channel, both channels operating simultaneously ..... 15 Watts at 4 and 8 ohms
10 Watts at 16 ohms
Comparable Total Music Power (IHF) ..... 45 Watts at 8 ohms
High-level hum and noise (ref. 15 Watts at 8 ohms) ..... −79dB
Phono hum and noise ..... 1.5 μV equivalent input
Dynamic range (phono input to tape recording output) 96dB
I.M. Distortion (SMPTE), at rated power 0.9%
Distortion decreases as output is lowered
Total Harmonic Distortion, at rated power ..... 0.9% Maximum
Distortion decreases as output is lowered
Power Bandwidth (IHF) for 0.9% THD ..... 15 Hz to 50,000 Hz
Damping Factor (ref. 8 ohms) ..... Greater than 45
Frequency Response
Through phono 1.0dB
Input Sensitivity (for 15 Watts at 8 ohms)
High level ..... 150 mV
Phono (1,000 Hz) ..... 2.2 mV
Input Impedance
High-level ..... 100,000 ohms
Phono ..... 47,000 ohms
Channel Separation 20 Hz to 20,000 Hz ..... 35 dB Minimum

FM SECTIONS:

IHF Usable Sensitivity ..... 3.0 μV
Selectivity ..... 50 dB
Noise Quieting ..... −60 dB at 1,000 μV
Total Harmonic Distortion, 400 Hz, 100% Mod ..... Mono: 0.2% Stereo: 0.5%
Frequency Response (ref. 75μ sec. de-emphasis) ..... ±1 dB 50 Hz to 15 KHz
Stereo Separation ..... 1,000 Hz 40 dB
Sub Carrier (38 KHz) Suppression ..... 60 dB

GENERAL:

Power Requirements ..... 120 V AC
50 to 60 Hz
At rated output, both channels operating ..... 110 Watts
Idling Power (Volume Control at zero) ..... 20 Watts

Dimensions
Panel Width ..... 14-11/64 Inches
Panel Height ..... 4-23/32 Inches
Depth ..... 11-1/32 Inches
Weight
Unit alone ..... 18 lbs
Packed for shipment ..... 23.6 lbs

* These specifications and exterior designs may be changed for improvement without advance notice.